

Final
Numbering

AMENDMENTS TO THE CLAIMS

Please amend claim 69 of the subject application as set forth below. In accordance with 37 C.F.R. §1.121, a claim listing including the status and text of all claims (as currently amended) appears below. In making these amendments, no new matter is added.

*Original
Numbering*
Claims 1-10. (Cancelled)

(1) 11. (Previously presented) A sensor assembly embedded in an elastomeric material, said sensor assembly comprising:

a pair of first strain sensors disposed on first opposed faces of a flexible pyramid-shaped body, said first strain sensors being deformable under a force applied by contact thereto for detecting a force in a first direction; and

a portion of elastomeric material in which said pair of first strain sensors and the flexible pyramid-shaped body on which said pair of first strain sensors is disposed are embedded;

wherein said first strain sensors generate corresponding output signals in response to the force in the first direction and wherein the force in the first direction is generally equal to the difference between the output signals of said first strain sensors.

(2) 12. (Original) The sensor assembly of Claim 11, further comprising:

a pair of second strain sensors disposed on second opposed faces of said body, said second opposed faces adjacent to said first opposed faces, and said second strain sensors detecting a force in a second direction generally orthogonal to said first direction;

and wherein said second strain sensors generate corresponding output signals in response to the force in the second direction, and wherein the force in the second direction is generally equal to the difference between the output signals of said second strain sensors.

(3) 13. (Original) The sensor assembly of Claim 12, wherein a sum of the first output signals and the second output signals is indicative of a force in a third direction is orthogonal to the first and second directions.

- (4) 14. (Original) The sensor assembly of Claim 11, wherein said body is made of the same material as the elastomeric material.
- (5) 15. (Original) The sensor assembly of Claim 11, wherein said body has a body hardness greater than the hardness of the elastomeric material.
- (6) 16. (Original) The sensor assembly of Claim 15, wherein the hardness of the elastomeric material is generally between 50 and 70 on the Shore A hardness scale.
- (7) 17. (Previously provided) The sensor assembly of Claim 16, wherein said body is made of one of polyamide, urethane and epoxy.
- (8) 18. (Original) The sensor assembly of Claim 11, wherein said first strain sensors are parallel plate capacitors.
- (9) 19. (Original) The sensor assembly of Claim 11, wherein said first strain sensors are piezoresistive silicon strain gauges.
- (10) 20. (Original) The sensor assembly of Claim 11, wherein said first strain sensors are piezoelectric devices.
- (11) 21. (Original) The sensor assembly of Claim 20, wherein at least one of said piezoelectric devices is one of PZT, ZnO, and PVDF.
- (12) 22. (Original) The sensor assembly of Claim 11, wherein said first strain sensors are interdigitated finger capacitors.
- (13) 23. (Original) The sensor assembly of Claim 13, further including a plurality of sensor assemblies embedded in an object in a mutually spaced relationship.

Claims 24-28. (Cancelled)

29. (Previously presented) The sensor assembly of Claim 11, wherein said portion of elastomeric material comprises a tire.

30. (Previously presented) A process of embedding a sensor in an elastomeric material, the process comprising:

providing a three-axis sensor assembly including two pairs of strain gauges, a first pair disposed on first opposed faces of a pyramid-shaped body so as to detect strain applied directly to said first pair of sensors in a first direction, and a second pair